

Negotiating Wage Settlements: A Structural Approach

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Résumé de l'article

Contrairement à d'autres études portant sur le processus de fixation des salaires, celle-ci examine les effets de certaines caractéristiques reliées aux parties et à la négociation sur les résultats des négociations salariales. Les politiques internes syndicales ainsi que le contexte macroéconomique ne sont pas nécessairement les seuls facteurs déterminants des accords salariaux. L'habileté et l'expérience des négociateurs, le type d'industrie (à base de capital ou de main-d'œuvre) les caractéristiques démographiques des employés (main-d'œuvre qualifiée ou non, jeune ou âgée, etc.), les caractéristiques structurelles des parties et les mécanismes de négociation peuvent aussi entrer en ligne de compte dans les résultats des négociations salariales. On doit donc prêter attention à de tels facteurs parce que, contrairement à l'environnement macroéconomique, quelques-uns d'entre eux peuvent être influencés par les parties elles-mêmes. La compréhension des rapports existant entre ces facteurs et les ententes salariales peut mettre à jour de nouvelles avenues pour les parties dans leurs efforts en vue de maximiser le résultat des négociations.

Une double analyse, à la fois structurelle et économique, a été retenue pour tenter d'expliquer les résultats des négociations salariales. Quels sont les facteurs, autres que les facteurs économiques qui peuvent influencer les accords salariaux? Si l'on considère par ailleurs le niveau macroéconomique et politique, quels sont les choix dont disposent les parties dans la recherche de la maximisation des gains d'une entente? Même si l'on a tenu compte de la situation économique en général, on insiste ici sur les variables suivantes: durée de la convention collective, organisation de l'entreprise, structure de la négociation collective et taille de l'unité de négociation.

Une analyse, à l'aide de la méthode *Logit*, de 405 conventions collectives déposées au ministère du Travail de l'Alberta en 1987 montre que les variables structurelles et les formes d'organisation industrielle ont une influence majeure sur la probabilité que les négociations donnent lieu à des concessions salariales, ce qui, en retour, entraîne des conséquences importantes dans le choix des tactiques de négociation tant pour les syndicats que pour les employeurs.

L'essentiel de cette étude, aussi bien pour les dirigeants patronaux que syndicaux, c'est qu'ils disposent de certains choix quant à la façon de maximiser leurs gains malgré un climat politique et économique qui puisse faire obstacle. Les facteurs tels que la durée de la convention collective, l'étendue de l'unité de négociation et le nombre de syndicats négociant avec un employeur ne sont pas des contraintes extérieures et accidentelles; au contraire, ils sont susceptibles d'être utilisés de façon systématique.

Naturellement, on ne peut pas toujours se servir de tous ces facteurs à volonté. La modification de la structure de négociation peut devenir problématique, si elle implique l'organisation d'une entreprise (succursale d'une entreprise à établissements multiples ou entreprise unique). Mais, l'essentiel est que dans une certaine mesure, la structure de négociation est variable. Par exemple, l'expérience récente aux États-Unis semble indiquer que, depuis le début de la décennie 1980, les entreprises comptant plusieurs usines et soumises à de fortes contraintes économiques, ont décentralisé leurs structures de négociation pour profiter des avantages économiques que pouvait offrir la concurrence entre leurs différentes unités. De même, les syndicats peuvent aussi penser à des moyens d'utiliser à leur avantage les structures de négociation.

Les conclusions précédentes doivent être utilisées avec prudence car l'étude souffre de trois limites. D'abord, elle n'a pas un caractère dynamique. Des études longitudinales sont nécessaires pour corroborer les résultats obtenus. En second lieu, faute de données, on n'a apporté aucune attention à la situation économique de l'entreprise.

Ainsi, tout en contrôlant les conséquences des forces macroéconomiques sur les ententes salariales, l'influence de celles qui sont de nature microéconomique demeure inconnue. Troisièmement, on n'a pas tenu compte de la possibilité que les accords salariaux fassent partie de compromis plus considérables (par exemple, concessions salariales en échange d'une plus grande sécurité d'emploi). Il est possible que de tels compromis puissent avoir des conséquences sur la probabilité qu'une entente salariale résulte en une augmentation ou une diminution de la rémunération.

Negotiating Wage Settlements

A Structural Approach

Yonatan Reshef

While attracting a growing research attention, the wage determination process has largely been studied from an economic perspective. This study, in contrast, adopts a combined, economic and structural approach in an attempt to account for wage gains and concessions. This paper asks, which determinants, other than economic factors, may impact the outcomes of wage settlements? Given their economic and political environments, what are the choices available to parties pursuing the maximization of wage settlements? A logit analysis of 405 agreements filed with Alberta Labour, in 1987, shows that structural variables bear important impacts on the likelihood of wage negotiations to result in wage increases. This, in turn, carries important implications for union and management wage bargaining tactics which are also discussed.

The effect of unionization on wages has attracted a great research attention. Concentrating on the union-nonunion wage differentials, most research in this area «... estimat[ed] the effect of unions on wages by comparing *average* wages for more organized groups of workers with average wages for less organized groups, attributing the difference in wages to the extent of organization» (Freeman and Medoff, 1984, p. 43).

The belief that economically disadvantaged workers are more likely to be union members because they expect unions to help reverse their situation has considerable empirical support. In the U.S., unionized workers earn higher incomes than nonunionized workers (Freeman and Medoff, 1984, p. 46; Kochan, Katz, and McKersie, 1986, pp. 103-4). And in Canada, the most recent *Labour Market Activity Survey* (Statistics Canada, 1988) shows

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that, as in the U.S., union workers earn higher wages than nonunion workers. While it is not clear whether the magnitudes of these wage differentials are totally due to the union effect, both Canadian (Maki and Christensen, 1980; MacDonald and Evans, 1981; Christensen and Maki, 1981; Robinson and Tomes, 1984; Gunderson and Riddell, 1988, pp. 303-39) and U.S. researchers (Lee, 1978; Mitchell, 1980; Freeman and Medoff, 1984; Hirsch and Addison, 1986; Lewis, 1986) concurred that, by and large, unions have a positive effect on their members' wages. By focusing on the union-nonunion wage differentials, however, researchers ignored the question of what factors determine wage differentials within the unionized sector of the economy.

With the advent of the wage concession bargaining (i.e., any wage giveback or zero wage increase) there has been a growing evidence that in both the U.S. (Freeman and Kleiner, 1988; Bureau of National Affairs, June 30, 1988) and Canada (Adams and Saul, 1988; Hryciuk, 1987; Panitch and Swartz, 1988, p. 100) the union wage effect is becoming less positive than it once was. This, in turn, has prompted some scholars to focus on union propensity to engage in concessionary bargaining, instead of on the union wage effect, to understand recent wage settlements in the unionized segment of the economy.

Earlier students of concession bargaining (e.g., Greenberg, 1968; Juris, 1969; Henle, 1973) as well as more recent researchers (e.g., Cappelli, 1982; 1985; Cappelli and Sterling, 1988; Kaufman and Martinez-Vazquez, 1988) attached paramount importance to a firm's economic situation when modelling union propensity to engage in concession bargaining and worker vote on wage concessions. Whereas most of the above scholars did include some non-economic variables in their models, their working assumption, and hence research emphasis, was that «economic pressures at the plant level threaten the security of union employment, and unions respond to those pressures by agreeing to bargain over concessions» (Cappelli, 1985, p. 95).

But union internal politics as well as macro environments are not necessarily the only determinants of wage agreements. Negotiators' skill and experience, the type of work (capital or labor intensive) performed by the represented employees, employee demographics (skilled/unskilled, old/young, etc.), and structural characteristics of the parties and of the bargaining process also can account for the outcomes of wage negotiations. Research attention should be given to such factors because unlike macro environments, some of these factors can be manipulated by the parties. Understanding the relationship between such micro factors and wage settlements may uncover, therefore, new tactical choices for parties attempting to maximize the outcomes of wage bargaining.

Here a combined, economic and structural approach is adopted to explain the outcomes of wage negotiations, thereby adding a structural perspective to the relevant body of knowledge. The paper asks, which structural determinants, other than economic factors, may impact the outcomes of wage settlements? Given their macro-economic and political environment, what are the choices available to parties pursuing the economic maximization of a wage agreement? While the general economic situation is controlled by using a seven-category industry variable¹, the emphasis is on micro-level, structural variables — the duration of a collective agreement, the structure of collective bargaining, the structure of the firm, and the size of the bargaining unit.

A logit analysis of 405 agreements filed with Alberta Labour, in 1987, shows that structural variables and industrial affiliation bear important impacts on the likelihood of wage negotiations to result in wage increases. This, in turn, carries important implications for union and management wage bargaining tactics which are discussed.

POLITICO-ECONOMIC ENVIRONMENTS OF ALBERTA UNIONS

Since the early 1980s, a combination of economic stagnation and hostile polity and courts has undercut Alberta unions' capabilities to effectively represent their members.

Economically, being a resource-based economy, Alberta is highly susceptible to economic booms and busts. Plummeting demand for products of its two major industries, oil and agriculture, has more than doubled the level of unemployment from 3,9% in 1979, to 9,8% in 1986, to 9,6% in 1987. Consequently, in 1987, Alberta's net migrant loss of 29 731 people to other provinces was Canada's highest, and a dramatic increase over the previous year's net loss of 3 831 people (Fine, 1988).

Politically, conservative governments have made unionization difficult. A national survey of «labor climate» conducted by the Canadian Federation of Independent Business found the Alberta labor law the least pro-labor in Canada (Languedoc, 1986). In November 1988, for example, the Alberta legislature proclaimed a new *Labor Relations Code* (Bill 22). The Code terminated a policy (used by all Canadian jurisdictions save British Columbia and Nova Scotia) of using authorization card counts as the major criterion for union certification. Now, unions are required to

¹ I agree with an anonymous referee that with only seven industry categories some significant differences in sub-industry characteristics are missed. Unfortunately, a further breakdown of the INDUSTRY variable is not feasible due to a lack of relevant information.

have signed up at least 40% of a company's employees for membership to be eligible to carry out a secret representation vote. And by giving cabinet the power to order decertification of unions that strike illegally and by banning picketing by people not directly affected by a strike, the Code reduces unions' capabilities to use collective action to promote member interests.

Judicially, several recent court decisions have undercut union capabilities to use the bargaining process to promote member and organizational interests. In 1985, the court quashed a former Labor Relations Board's decision which accepted the notion of a «bridging clause». This clause extended the validity of a collective agreement to the period between its expiring date and the next agreement. This Board decision had been quashed by a lower court. Later, sustaining the latter's decision, the Court of Appeal said that, «[t]he Board erred in characterizing this action [voiding expired agreements by locking out employees and signing them on individual contracts] as 'unilateral imposition of changes in the collective agreement'. At that point, there was no collective agreement; also, the new agreements were not unilateral; they were agreed to by the employers and individual employees».

In October 1986, during the 6-month violent strike at Gainers meat-packers, the foregone decision received further support. Ruling on employers' prerogatives to unilaterally change terms and conditions of employment once the collective agreement is expired, the Board stated that there is «nothing inconsistent in having implied individual contracts of employment co-exist with the union's exclusive authority to bargain on behalf of those employees... The scheme of the *Labour Act* is to grant collective bargaining rights, not to diminish the laws governing individual contracts of employment». In reconciling the above with the doctrine of «good faith bargaining» the Board said that, the Law «is aimed at a healthy bargaining process, not at any particular bargaining result». In other words, employers can replace all of their striking workers and set new terms and conditions of employment on an individual basis, as long as the employers have made an offer to the union «in good faith», that is, they never explicitly mentioned any intention to circumvent the union (Noel and Gardner, 1988, p. 29).

Together, these factors help explain why Alberta is the least unionized province in Canada (Kumar, 1986, p. 99); why employers have been gaining the upper hand in decisive industrial disputes (Noel and Gardner, 1988); why unionization levels have been steadily declining (from 32,3% in 1983, to 31,9% in 1984, to 30,9% in 1985, to 29,4% in 1986, to 28,5% in 1987²,

2 Alberta Labour, 1986, p. 1. These figures are not comparable with previous years since some of the increase in membership between 1979 (24%) and 1983 (32,3%) is due to improved survey techniques.

well below the national level of about 38%-39% in each of those years); and why unions could not deliver high wage increases, in 1986. In that year, Alberta workers received the lowest pay raises of all Canadians. The average pay increase for Albertan workers was 3,8% while the average Canadian worker got 5,1% more in his/her payment. Interestingly, nonunion employees fared better, with average wage increase of 5,0%, than union employees, who received only 3,3% (Hryciuk, 1987).

On a superficial level, the Alberta politico-economic environment does not leave unions much room to maneuver in wage negotiations. Overwhelmed with a sluggish economy and hostile polity, they seem bound to assent to whatever wage proposal management offers. But even under such a blend of macro circumstances, some choices may still be available to negotiators who try to maximize economic gains at the bargaining table. The following model demonstrates how, their environments notwithstanding, union and management negotiators can maneuver some structural factors to protect the economic interests of their constituents.

THE MODEL AND HYPOTHESES

Industry

While the emphasis of this paper is on structural determinants of wage settlements, attention must be given to interindustry differences in economic performance because: First, it directly impacts the outcomes of wage negotiations and second, its effect must be controlled for to estimate the direct effects of the structural variables. Although a rough measure, an industry variable comprising seven categories — mining and oil, manufacturing, construction, trade, service, public administration, and transportation, communications and utilities — is used to capture these interindustry differences.

Kaufman and Stephan (1987) found that five factors, the share of women in the labor force, unemployment levels, union bargaining power, escalator clauses (COLA) in collective agreements, and a shift in industrial sales, were primarily responsible for changes in interindustry wage structure. Over the 1970s, industries employing higher proportions of women and industries where unemployment level rose proportionately more had experienced a slower rate of wage growth. Wages grew more rapidly in regulated industries with a high rate of unionization, and in industries with large increase in sales. Finally, the «combination of extensive COLA coverage in the high-wage industries and rapid rates of unanticipated inflation widened the wage structure» (p. 193).

Hence, the likelihood of gaining any wage increase is greater for an industry where the union is powerful, unemployment is low, female workers constitute a small proportion of the total labor force, and which is rapidly growing. Powerful unions, tight labor markets, and rapid growth increase employer vulnerability to union sanctions, thus increasing unions' likelihood to gain wage increases. Gender impacts wage settlements through its effects on the type of jobs female and male workers perform, career goals, being a full- or part-time employee, and training opportunities (e.g., Cook, 1987).

Table 1 provides some numerical accounts of the seven industries included in this study. Since only ten out of the 405 agreements had a COLA clause, this factor is not included in the analysis. Apparently, the service-producing industries employ a higher ratio of female/total employment with the service industry being ranked at the top in this category. Generally, union power, measured by the level of union density in each industry, is higher in the service-producing industry with the highest unionization level being in public administration. Note, however, that the service-producing industries' unionization would have dropped to 24.2 per cent had the finance industry been included in the analysis. This industry is excluded since, in Alberta, no finance workers are covered by collective agreements. Between 1975 and 1985, the goods-producing industries experienced a higher economic growth. However, while the mining industry grew almost fourfold (mainly due to enormous investments in oil exploration) manufacturing and construction rank last among all of the seven industries. Finally, unemployment in the goods-producing industries is almost as twice as high as in the service-producing industries. The double-digit unemployment level in construction is largely responsible for this ratio.

Since within each industry these factors exert contrasting pressures whose relative impact on wage settlements is unknown, the only hypothesis made is,

H1: that the likelihood of gaining wage increases differs across industries, other things equal.

Size

When under economic pressures it is easier for small³ companies' managers to communicate a sense of economic crisis to their employees

3 Unfortunately, since no data is available on the size of a firm's «relevant» labor force, it is not possible to compute an organized/organizable labor force ratio. Note, however, that while such a ratio is a measure of union bargaining power (e.g., Mishel, 1986) the focus here is on another factor, that is, the ease of the employee-manager communication.

(Greenberg, 1968; Kassalow, 1982). By the same token, dealing with a small bargaining unit management, even in profitable and highly unionized firms (Winter, 1984; Reisman and Compá, 1985; Freeman and Medoff, 1984, p. 51), can more easily create and socialize employees into an «impending doom» culture. Consequently, workers may grow sympathetic to their firm's economic needs and to the logic of management remedies of which wage concessions may be one component. The larger a bargaining unit gets the higher the number of interest groups and the more difficult a direct manager-employee communication becomes. Then, communication should pass through union leaders who, however receptive to the company's economic needs, may face internal problems trying to convince their constituents that wage concessions are necessary. Hence,

H2: that the larger a bargaining unit, the higher a union's chances to gain wage increases, other things equal.

Table 1

A Numerical Account (%) of Some Industrial Features, Alberta, 1987

<i>Industry Group¹</i>	<i>Female Worker²</i>	<i>Union Density³</i>	<i>Economic Growth (1975-85)⁴</i>	<i>Unemployment⁵</i>
<i>Goods-Producing Industries</i>	18,6	26,8	274,7	10,1
Mining	20,6	6,0	373,8	5,1
Manufacturing	23,1	29,0	189,6	8,4
Construction	11,7	51,0	114,3	17,1
<i>Service-Producing Industries</i>	51,1	32,5	248,8	5,6
Transportation,				
Communications & Utilities	27,6	47,0	295,7	6,6
Trade	47,1	8,0	205,4	6,5
Service	61,8	32,0	251,7	4,4
Public Administration	38,5	79,0	239,5	8,0

Sources and Notes:

¹ Since, in 1987, no wage settlements were concluded in the finance industry this industry is excluded from the analysis.

² Statistics Canada, December 1987, p. 50. These figures represent the proportion of female workers out of the total labor force employed by an industry.

³ Alberta Labour, May 1987, p. 2.

⁴ This is a measure of income accruing to the factors of production. Alberta Treasury, August 1987, p. 57.

⁵ Statistics Canada, December 1987, pp. 50, 67. This statistic is for Canada as a whole since relevant data at the provincial level are not available.

Firm

Whether a company is single-plant or multiplant may bear a direct impact on the outcomes of wage negotiations. Naturally, the higher the risk that workers will be laid off, the lower a union's propensity to press management for wage increases (Cappelli and Sterling, 1988). This risk and propensity is higher in multiplant companies which differ from single-plant companies in their abilities and willingness to use the threats of individual plant shutdowns to force union concessions (Henle, 1973; Kassalow, 1982). This is so because an inefficient plant, or a plant that represents a relatively small share of its company's total capacity, can be easily shut down without hurting the firm competitive situation (Cappelli, 1985). In the same vein, it is easier for a multiplant employer to minimize the cost of a strike in one plant compared with a struck single-plant employer (Mishel, 1986).

On the union side, the effect of a multiplant bargaining unit depends on whether it covers the whole firm or not. Obviously if it does, then the union is not necessarily in a weaker position than in a single plant. Unfortunately, the current sample does not contain any case where a multiplant bargaining unit negotiated a company-wide agreement. Hence,

H3: that the likelihood of a union to gain wage increases is greater when it bargains with a single-plant employer than when it bargains with a multiplant employer at the branch level, other things equal.

Duration

Different contract durations are associated with different costs and benefits for each party. While the parties can alter a contract's duration to cope with changing circumstances, usually there will be one party that will benefit more from a proposed change and, therefore, another who may resist the change.

The onset of deregulation, privatization, market globalization, and the free-trade agreement which have intensified domestic and foreign competition, may render long-term contracts with modest wage increases favorable to both management and unions. Because a property of long-term contracts is that they reduce the uncertainty associated with changes in contracts (Cappelli, 1982), management may hope to induce unions to sign long-term contracts by offering them a modest wage increase. By so doing, management minimizes the cost of wage increases by spreading moderate increases over a longer contract duration. Unions, for whom short-term contracts are not as economically disruptive, will have to decide whether or not to accept such an offer. If they reject such an offer they will risk the political and

economic implications of a strike or even of a higher wage settlement, which may result in some layoffs. Given that, at least until recently, unions emphasized job security over wages (Slotnick, 1987), unions would be content to show any success in their wage negotiations. It is, therefore, assumed here that unions are more likely to gain a wage increase if they agree to sign a long-term contract. Hence,

H4: that the longer a contract's duration the greater the likelihood of a union to secure wage increases, other things equal.

Agreement

Several unions will join forces for the purpose of coalition or coordinated bargaining to increase their bargaining power⁴. Hence,

H5: that the likelihood of multiunion/single-employer wage negotiations to result in wage increases is high relative to a single-union/single-employer negotiations, other things equal.

METHODS

Variables and Measurements

The model outlined above takes the form

$$\text{WAGE} = A + B_1\text{INDUSTRY} + B_2\text{DURATION} - B_3\text{AGREEMENT} \\ + B_4\text{FIRM} + B_5\text{SIZE} + E,$$

where WAGE is a categorical variable indicating the outcome of a wage settlement on a yearly basis (i.e., wage gain per year) (1 = wage increase; 0 = no wage increase). This dichotomy reflects the formerly noted growing difficulties of Canadian unions to secure wage increases since the early 1980s (see also Kumar, 1987), of which the current data set is indicative. Out of the 405 analyzed agreements, 213 (52,6%) resulted in a 1-3,5 percent wage increase per year, 117 (28,9%) included a zero wage increase, and 14 (3,5%) agreements included wage givebacks. With growing competitive pressures and management capabilities to nullify wage increases, it is not unreasonable to assume that securing a non-zero wage increase rather than the magnitude of the increase has become the priority of many union leaders. The WAGE variable is designed to capture this recent circumstance.

4 No master agreements were concluded in multiplant companies. Thus this sample includes either single-plant company agreements or multiplant company agreements signed at the branch level.

INDUSTRY is a seven-category variable indicating the industry in which a firm belongs.

DURATION is a categorical variable indicating the duration of a collective agreement (1 = greater than 24 months; 2 = greater than 12 and less than or equal to 24 months; 3 = less than or equal to 12 months).

AGREEMENT is a categorical variable indicating whether an agreement was negotiated by one or multiple unions (0 = one union; 1 = multiple unions).

FIRM is a categorical variable indicating whether or not a firm is a branch of a multiplant company (0 = no; 1 = yes).

SIZE is a categorical variable indicating the size of a bargaining unit (1 = greater than 100 employees; 2 = greater than 50 and less than or equal to 100 employees; 3 = less than or equal to 50 employees).

Sources of Data

Section 82 of the *Labor Relations Act* of Alberta required parties to file a copy of their collective agreement with the Director of Mediation Services. In 1987, 405 collective agreements, covering 59,283 employees, were filed with the Director. The average wage increase was 1.6 per cent per employee per year. Note, however, that the filed collective agreements do not represent the total number of agreements signed in Alberta, in 1987. It may take the parties up to six months before they file their signed agreement. The filing process of agreements signed in a specific year ends by December of the following year.

RESULTS

Descriptive statistics for all variables used in the empirical analysis are given in Table 2. Given the dichotomous nature of the dependent variable, logit is used to estimate the model for this variable.

The logit estimates are presented in Table 3. The estimates for model 1 indicate the effects of all independent variables on the likelihood of a wage settlement to result in a wage increase or not. In this model the construction industry was arbitrarily omitted. To compare the likelihood of unions in each industry to gain wage increases to the likelihood of unions' gaining wage increases in all of the other industries, six additional models were estimated, each one with a different industry omitted. Models 2 through 7 present the results of these analyses. It is noteworthy that all of the models

presented in Table 3 were estimated with all of the independent variables included. However, since the coefficients on the other independent variables are the same across all the analyses, only the INDUSTRY's estimates are presented.

Table 2
Descriptive Statistics for 405 Wage Settlements, 1987

<i>Variable</i>	<i>Valid Cases</i>	<i>Frequency</i>	<i>Percent</i>
<i>Dependent Variable</i>			
<i>Wage (increase)</i>	405		
Yes		274	67,7
No		131	32,3
<i>Independent Variables</i>			
<i>Industry</i>	405		
Mining ¹		18	4,4
Manufacturing		116	28,6
Construction		24	5,9
Utilities ²		40	9,9
Trade		53	13,1
Service		124	30,6
Public Administration		30	7,4
<i>Duration³ (in months)</i>	405		
le 12		153	37,8
ge 13 and le 24		201	49,6
ge 25		51	12,6
<i>Agreement</i>	405		
Single-Union		296	73,1
Multiunion		109	26,9
<i>Firm</i>	405		
Single-Plant		307	75,8
Branch		98	24,2
<i>Size</i>	405		
le 50		221	54,6
ge 51 and le 100		70	17,3
ge 101		114	28,1

Source: Collective agreements filed with Alberta Labour, 1987.

¹ Mines (include milling), quarriers, and oil wells.

² Transportation, communication, and other utilities.

³ Lower than or equal to; Greater than or equal to.

Table 3
Logit Analysis of Whether Unions
Gained Wage Increases or Not

<i>Variable</i> ¹	<i>WAGE</i>						
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
Constant	2,60 (5,39)***	2,60 (5,39)***	2,60 (5,39)***	2,60 (5,39)***	2,60 (5,39)***	2,60 (5,39)***	2,60 (5,39)***
<i>Industry</i>							
Mining	20,08 (4,06)***	Omitted	7,04 (2,88)***	8,08 (2,85)***	3,22 (1,61)	7,64 (2,95)***	7,26 (2,50)**
Manufacturing	2,83 (2,42)**	,14 (-2,88)***	Omitted	1,15 (,35)	,46 (-1,90)*	1,08 (,26)	1,03 (,06)
Construction	Omitted	,05 (-4,06)***	,35 (-2,42)**	,40 (-1,80)*	,16 (-3,50)***	,38 (-2,23)**	,36 (-1,75)*
Utilities	2,47 (1,80)*	,12 (-2,85)***	,87 (- ,35)	Omitted	,40 (-1,83)*	,95 (,14)	,90 (- ,20)
Trade	6,21 (3,50)***	,31 (-1,61)	2,19 (1,90)*	2,51 (1,83)*	Omitted	2,37 (1,89)*	2,26 (1,39)
Service	2,62 (2,23)**	,13 (-2,94)***	,92 (- ,73)	1,06 (,14)	,42 (-1,89)*	Omitted	,95 (- ,11)
Public Administration	2,75 (1,75)*	,14 (-2,50)***	,97 (- ,06)	1,11 (,20)	,44 (-1,39)	1,05 (,11)	Omitted
<i>Duration</i> ² (in months)							
ge 13 and le 24	5,95 (7,24)***						
ge 25	3,66 (3,69)***						
<i>Agreement</i>							
Single-Union	,68 (-1,38)						
<i>Firm</i>							
Single-Plant	1,71 (1,76)*						
<i>Size</i>							
ge 51 and le 100	1,65 (1,80)*						
ge 101	1,78 (1,92)*						

Z-values in parentheses.

*Significant at ,10 level, one- or two-tailed test as appropriate.

**Significant at ,05 level, one- or two-tailed test as appropriate.

***Significant at ,01 level, one- or two-tailed test as appropriate.

¹ All variables are categorical. The omitted categories (other than *Industry*) are: *Duration* le 12; multiunion agreement; a branch; and *Size* le 50.

² Lower than or equal to; Greater than or equal to.

All of the logit models were estimated with the coefficient on the omitted category for each variable constrained to zero. To interpret the logit coefficients they had been multiplied by 2 and then the antilog of this parameter was taken (SPSSX, p. 551). For example, from model 1, the antilog of $2 \times 1,50$ is 20,08, which is the coefficient on mining. This indicates that the odds of unions in the mining industry to gain any wage increase relative to construction (the omitted category) unions' gaining any wage increase is more than 20 to 1.

DISCUSSION

The empirical results of the INDUSTRY analyses are mixed, while those of the other independent variables support all of the hypotheses. Two clear cut patterns of interindustry wage settlements have emerged from the INDUSTRY analyses. One, the odds of unions in all of the industries to gain any wage increase relative to construction unions' gaining any wage increase are more than twice (model 1). Two, the odds of unions in the mining industry to gain wage increases are more than as three times as high as the odds of unions in all of the other industries (model 2). However, while consistent with this pattern, the coefficient on trade is nonsignificant. Another interesting pattern appears when trade is the omitted category (model 5). Save for mining, the odds of unions in the trade industry to gain wage increases are at least as twice as high as the odds of all other unions' gaining wage increases.

The above results are consistent with politico-economic developments in the construction and mining industries. In the construction industry, in Alberta, unemployment has sextupled from 5,1 per cent in 1981, to 30,3 per cent in 1984, and dropped to 19,8 per cent in 1985 (Fisher and Kushner, 1986). Several court decisions have made it easier for contractors to create nonunion subsidiaries (Fisher and Kushner, 1986, pp. 787-9). Over the last decade, the economic growth of this industry has been the lowest (see Table 1). Consequently, unionization in construction has dropped from 81 per cent in 1984, to 51 per cent in 1986 (Alberta Labour, 1985-1987) and many union members have been willing to undertake jobs paying below union rates (Fisher and Kushner, 1986).

Furthermore, in July 1987, in an effort to stabilize industrial relations in this industry, the Alberta government legislated Bill 53 (which expired with the proclamation of the new *Labor Relations Code* in November, 1988). The gist of the new legislation was that the parties — the Federation of Construction Contractors and the Federation of Construction Trade Unions — should have signed a master agreement setting out terms and con-

ditions for the whole industry and three subsidiary agreements which set out wages and benefits for workers in different trade groups. Although the parties were negotiating the first master agreement for over ten months, no agreement was concluded. The construction unions, many of whom had been without agreements since 1984, were unable to pressure either the contractors to conclude an agreement or the government to appoint an arbitrator who could impose a first master agreement.

In the mining industry, unions may have benefited from a resurging interest in oil exploration and development. In 1987, union bargaining power may have increased due to a growing demand for Alberta oil and natural gas, an upsurge in oil well drilling (due to investors' taking advantage of the last exploration drilling incentives of the Alberta government), deregulation of natural gas price-setting and a new natural gas royalty structure (see the following issues of *Globe and Mail*: January 21, 1987, p. B:6; June 8, 1987, p. B:10; December 8, 1987, p. B:5). In addition, it is probable that in 1987, after four years of massive layoffs, oil companies have reached a level of employment below which they cannot function altogether. Unions may have used these new circumstances to catch up on previous years' wage concessions.

The situation in the trade industry is puzzling. In this industry, female workers comprise almost one half of the labor force (47,1%), very few workers are unionized (8,0%), the unemployment level is relatively high (6,5%), and the economic growth has been the lowest among the service-producing industries (205,4%). According to Kaufman and Stephan (1987), therefore, the odds of unions in the trade industry to gain wage increases should have been lower relative to the odds of other unions, at least, in the service-producing industries. Perhaps, unions may have used the 1987 bargaining round to catch up on wage concessions they had made in the previous bargaining round which took place at the peak of an economic downturn, in 1985-86. Or, perhaps, since 39 out of the 53 agreements signed in this industry cover food stores and wholesalers of food the data and results are biased. In 1987, it is possible that this segment of the trade industry fared better than other segments.

As hypothesized, the odds of unions signing contracts longer than one year to gain wage increases are more than as three times as high as the odds of unions signing shorter contracts. In 1987, in Alberta, the largest average wage increase per each year of the contract (1,8%) was secured by unions signing contracts for more than two years. The smallest average wage increase (0,8%) was achieved by unions signing contracts for one year or less. This pattern may reflect a compromise between management's needs to

stabilize and minimize labour costs and unions' desire to achieve any wage increases, a task that has become more difficult in the face of increasingly intransigent employers.

The likelihood of a union bargaining on its own to gain wage increases is two thirds the likelihood of several unions bargaining together. The coefficient on single union, however, is nonsignificant. Obviously, a multiunion/single employer bargaining increases the collective power of unions to economically sanction management and resist its demands for wage concessions, which may not always stem from economic imperatives (Winter, 1984; Reisman and Compa, 1985).

When a union bargains with a single-plant firm's representatives, it is 71 per cent more likely to gain wage increases than a union which bargains with a multiplant company's branch representatives. As has been explained before, a multiplant employer is more capable of threatening and actually sanctioning workers compared with a single-plant employer.

Finally, the larger a bargaining unit the greater the likelihood of a union to gain wage increases. Since the worker-employer communication is easier in smaller bargaining units management can more easily communicate a sense of economic crisis to its union workers, thereby increasing their receptiveness to the logic of management remedies, such as wage concessions. In addition, when the bargaining unit's size approximates the firm's production workforce it provides a reliable measure of the firm's ability to withstand economic pressures, in itself a measure of a union's likelihood to gain wage increases. These pressures are higher in smaller plants (bargaining units) which are «more vulnerable than larger plants to layoffs and shutdowns because their unit costs tend to be higher... and because a smaller absolute dropping demand can push them below their breakeven point» (Cappelli, 1985, p. 94; see also Freeman and Medoff, 1984, p. 51).

CONCLUSIONS

Unlike other studies of the wage determination process, this study has emphasized the impacts of some structural characteristics of the bargaining process and parties on the outcomes of wage negotiations. The major implication of this study for both union leaders and managements is that wage settlements are determined by these structural noneconomic as well as by economic factors. While macro economic and political forces play an important role in the wage determination process they are not the sole determinants of wage negotiation outcomes. This leaves the parties with some

choices as to how to maximize their economic benefits despite an obstructive politico-economic environment. Factors such as contract duration, bargaining unit size, and number of unions negotiating with an employer are not exogenous, accidental constraints; rather, they are subject to systematic manipulation.

Obviously, not all of these factors are always maneuverable. The manipulation of a bargaining structure, for example, may become problematic when a firm's structure (i.e., being a branch of a multiplant company or a single-plant firm) is involved. Yet, the gist here is that, to a certain extent, bargaining structure is variable. Indeed, evidence from the U.S. (Kochan, Katz, and McKersie, 1986; Zellner, 1987) suggests that since the early 1980s, economically stressed multiplant companies have decentralized bargaining structures to take advantage of the economic opportunities offered by inter-plant competition. Seemingly, unions can also figure out ways to manipulate bargaining structures to their advantage.

The aforementioned conclusions should be taken cautiously since this study suffers from three limitations. First, it is not dynamic. While this study is based on the most recent available data set, more longitudinal studies are needed to corroborate the current findings and render them generalizable. Second, due to a lack of information no attention was given to the economic situation at the level of the firm. Thus, while controlling for the impact of macro-level forces, the impact of the micro-level economic situation on wage settlements remains unknown. Third, the possibility that wage settlements are part of a more comprehensive exchange transaction (e.g., wage concessions for higher job security) between the parties was not taken into account. It is possible that such exchange transactions bear a significant impact on the likelihood of a wage settlement to result in a wage increase or concession. However, at least in the current case no formal quids-pro-quos have been registered (see Alberta Labour, 1986-1988) such as the Guaranteed Employment Numbers or the Job Opportunity Bank Security Program signed in the U.S. automobile industry, in 1987 and 1984 respectively. It is highly likely, therefore, that such exchange arrangements did not intervene in wage negotiations in Alberta, nor in 1987 and neither before then.

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La négociation des salaires: une approche structurelle

Contrairement à d'autres études portant sur le processus de fixation des salaires, celle-ci examine les effets de certaines caractéristiques reliées aux parties et à la négociation sur les résultats des négociations salariales. Les politiques internes syndicales ainsi que le contexte macroéconomique ne sont pas nécessairement les seuls facteurs déterminants des accords salariaux. L'habileté et l'expérience des négociateurs, le type d'industrie (à base de capital ou de main-d'oeuvre) les caractéristiques démographiques des employés (main-d'oeuvre qualifiée ou non, jeune ou âgée, etc.), les caractéristiques structurelles des parties et les mécanismes de négociation peuvent aussi entrer en ligne de compte dans les résultats des négociations salariales. On doit donc prêter attention à de tels facteurs parce que, contrairement à l'environnement macroéconomique, quelques-uns d'entre eux peuvent être influencés par les parties

elles-mêmes. La compréhension des rapports existant entre ces facteurs et les ententes salariales peut mettre à jour de nouvelles avenues pour les parties dans leurs efforts en vue de maximiser le résultat des négociations.

Une double analyse, à la fois structurelle et économique, a été retenue pour tenter d'expliquer les résultats des négociations salariales. Quels sont les facteurs, autres que les facteurs économiques qui peuvent influencer les accords salariaux? Si l'on considère par ailleurs le niveau macroéconomique et politique, quels sont les choix dont disposent les parties dans la recherche de la maximalisation des gains d'une entente? Même si l'on a tenu compte de la situation économique en général, on insiste ici sur les variables suivantes: durée de la convention collective, organisation de l'entreprise, structure de la négociation collective et taille de l'unité de négociation.

Une analyse, à l'aide de la méthode *Logit*, de 405 conventions collectives déposées au ministère du Travail de l'Alberta en 1987 montre que les variables structurelles et les formes d'organisation industrielle ont une influence majeure sur la probabilité que les négociations donnent lieu à des concessions salariales, ce qui, en retour, entraîne des conséquences importantes dans le choix des tactiques de négociation tant pour les syndicats que pour les employeurs.

L'essentiel de cette étude, aussi bien pour les dirigeants patronaux que syndicaux, c'est qu'ils disposent de certains choix quant à la façon de maximiser leurs gains malgré un climat politique et économique qui puisse faire obstacle. Les facteurs tels que la durée de la convention collective, l'étendue de l'unité de négociation et le nombre de syndicats négociant avec un employeur ne sont pas des contraintes extérieures et accidentelles; au contraire, ils sont susceptibles d'être utilisés de façon systématique.

Naturellement, on ne peut pas toujours se servir de tous ces facteurs à volonté. La modification de la structure de négociation peut devenir problématique, si elle implique l'organisation d'une entreprise (succursale d'une entreprise à établissements multiples ou entreprise unique). Mais, l'essentiel est que dans une certaine mesure, la structure de négociation est variable. Par exemple, l'expérience récente aux États-Unis semble indiquer que, depuis le début de la décennie 1980, les entreprises comptant plusieurs usines et soumises à de fortes contraintes économiques, ont décentralisé leurs structures de négociation pour profiter des avantages économiques que pouvait offrir la concurrence entre leurs différentes unités. De même, les syndicats peuvent aussi penser à des moyens d'utiliser à leur avantage les structures de négociation.

Les conclusions précédentes doivent être utilisées avec prudence car l'étude souffre de trois limites. D'abord, elle n'a pas un caractère dynamique. Des études longitudinales sont nécessaires pour corroborer les résultats obtenus. En second lieu, faute de données, on n'a apporté aucune attention à la situation économique de l'entreprise. Ainsi, tout en contrôlant les conséquences des forces macroéconomiques sur les ententes salariales, l'influence de celles qui sont de nature microéconomique demeure inconnue. Troisièmement, on n'a pas tenu compte de la possibilité que les accords salariaux fassent partie de compromis plus considérables (par exemple, concessions salariales en échange d'une plus grande sécurité d'emploi). Il est possible que de tels compromis puissent avoir des conséquences sur la probabilité qu'une entente salariale résulte en une augmentation ou une diminution de la rémunération.